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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,851	10/30/2003	Hung Chang	MSCP0001USA	2850
27765	7590	09/30/2005	EXAMINER	
NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116			PAPE, ZACHARY	
			ART UNIT	PAPER NUMBER
			2835	
DATE MAILED: 09/30/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/605,851	CHANG, HUNG	
	Examiner	Art Unit	
	Zachary M. Pape	2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: on page 6 of the specification the phrase, "The computer system 30 OLE_Link1 comprises OLE_LINK1s a processor 34 for processing data" appears to contain errant words.

Appropriate correction is required.

Claim Objections

2. Claim 7 is objected to because of the following informalities: it contains redundant recitation of, "a storage unit". The storage unit has already been defined in independent claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "heat pipe" in claim 1 is used by the claim to mean "pipe", while

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the accepted meaning is "a pipe wherein a phase change is present." The term is indefinite because the specification does not clearly redefine the term. Claims 2-8 are also rejected for at least the reason that they include the indefinite term, "heat pipe" since they depend from claim 1.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheon (US 2004/0008483) in view of Kobayashi et al. (US 6,840,304).

With respect to claim 1, Cheon teaches a computer system (1) comprising: a processor (Pg 3, Paragraph 37, line 9) for processing data; a storage unit [28, paragraph 48 states, "the controller 28 applies a control signal programmed according to the temperature signal" which indicates that the controller must be capable of storing information] for storing data; and a thermal module (11) for dissipating heat generated by the processor, comprising: a pipe (12), adjacent to the processor (As illustrated in Fig 1), for conducting the heat; and a cooling device comprising: a tank (24), a plurality of pumps (23) coupled to the tank for driving liquid coolant to flow in the heat pipe; and a control unit (28) for controlling the rotating speed of said pumps to change the flowing speed of the liquid coolant (See Paragraphs 67). While Cheon teaches a single tank,

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Cheon fails to teach a plurality of tanks connected serially wherein the first tank and the last one of the tanks are connected with the heat pipe to form a closed loop. Kobayashi et al. teaches a plurality of tanks (10a, 10b, 10c) connected serially wherein the first tank and the last tank are connected with the heat pipe to form a closed loop (As illustrated in Fig 4). It would have been obvious to one of ordinary skill in the cooling art at the time the invention was made to combine the multiple tanks of Kobayashi with the cooling system of Cheon to provide additionally capacity for storing coolant in the event that the cooling system needs to introduce more coolant to keep up with the increase in heating demand (Column 8, Lines 14-19). Providing more coolant when there is an increase in cooling demand will reduce the likelihood of damage to the component being cooled and will also allow the component to work more efficiently.

With respect to claim 2, Cheon teaches pumps (23) coupled to tank (24). When the cooling system of Cheon is combined with the additional tanks of the Kobayashi et al. reference, the pumps (23) would also be coupled to each additional tank at least through the internal (12) and external (21) tubing.

With respect to claim 6, Cheon further teaches that the cooling device further comprises an aperture (26) for filling the liquid coolant.

With respect to claim 7, Cheon further teaches that the storage unit for storing data further comprises a program stored in said storage unit (See Paragraph 48).

With respect to claim 8, Cheon further teaches that the control unit comprises a logic circuit (Page 5, Paragraph 75, where Cheon states that the control unit must

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calculate a temperature thereby explicitly stating that the control unit comprises a logic circuit).

5. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheon (US 2004/0008483) in view of Kobayashi et al. (US 6,840,304) and further in view of Gilbert et al. (US 6,546,360).

With respect to claim 3, Cheon in view of Kobayashi et al. teaches the limitations of claim 1 as described above, but fails to teach that one of the tanks contains a sensor. Gilbert et al. teaches the conventionality of using a sensor in a tank (See Fig 2a,b; also Column 1, Lines 31-36). It would have been obvious to one of ordinary skill in the cooling art at the time the invention was made to combine the tank sensor of Gilbert et al. with the teachings of Cheon and Kobayashi et al. to provide a means of determining if the tank is empty. Knowing when a tank is empty will alert the user and allow the user to replenish the empty tank thus avoiding overheating problems with the processor.

With respect to claim 4, placing the sensor of Gilbert et al. into one of the tanks (10a, 10b, 10c) of Kobayashi et al. (As illustrated in Fig 4) would result in the sensor being placed above a liquid out port (Near 12) since the liquid out port is located in the bottom of the tank.

Allowable Subject Matter

6. Claim 5 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

With respect to claim 5, the allowability resides in the overall structure of the device as recited in dependent claim 5 and at least in part because said claim 5 recites, "the last one of the tanks is below the bottoms of the other of the tanks".

The aforementioned limitations in combination with all remaining limitations of claims 1 and 5 are believed to render said claim 5 patentable over the art of record.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 4,897,762 further teach tanks with pumps for cooling a microchip.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zachary M. Pape whose telephone number is 571-272-

2201. The examiner can normally be reached on Mon. - Thur. & every other Fri.
(8:00am - 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached at 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ZMP



ANATOLY VORTMAN
PRIMARY EXAMINER